COMPUTER HOUSING VENTILATION ARRANGEMENT

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates generally to computer housings and, more specifically, to a computer housing ventilation arrangement.

2. Description of the Related Art

A personal computer is generally equipped with an electric fan adapted to cool the temperature of the power supply module and to draw inside hot air to the outside of the computer case. Because the electric fan draws inside hot air to the outside of the computer case in a horizontal direction toward the back panel of the computer case, outside cooling air cannot be circulated through the computer case to effectively lower the inside temperature of the computer. Further, following fast development of computer technology, various advanced CPUs of fast operation speed have been continuously developed. A CPU of relatively higher operation speed produces relatively greater amount of heat energy, i.e., the faster the operation speed of a CPU is the higher the working temperature of the CPU will be. Excessive high working temperature affects normal functioning of the CPU. Various heat sinks and CPU cooling devices have been disclosed for use to lower CPUs' working temperature. However, these devices are specifically designed to lower CPUs' working temperature. They do not improve the ventilation of the computer.

SUMMARY OF THE INVENTION

The present invention has been accomplished under the circumstances in view. It is the main object of the present invention to provide a computer housing ventilation arrangement, which greatly improves the ventilation of the computer. It is another object of the present invention to provide a computer housing ventilation arrangement, which effectively lowers the inside temperature of the computer during the operation of the computer. According to one aspect of the present invention, the computer housing ventilation arrangement comprises a computer case, the computer case having at least one opening in the bottom panel, at least one wire gauze filter respectively mounted in the at least one opening, and at least one electric fan respectively mounted inside the at least one opening and adapted to draw outside cooling air upwardly into the inside of the computer case through the at least one opening. According to another aspect of the present invention, a deck is provided to support the computer case above a flat surface, enhancing ventilation through the computer case.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is an exploded view of one embodiment of the present invention.

FIG. 2 is an assembly view of the embodiment shown in FIG. 1.

FIG. 3 is a sectional front view in an enlarged scale of the embodiment shown in FIG. 1.

FIG. 4 is a bottom view of the embodiment shown in FIG. 1.

FIG. 5 is a bottom view of an alternate form of the present invention,

showing two fans provided inside the oval opening in the bottom panel of the computer case.

FIG. 6 is a bottom view of another alternate form of the present invention, showing one fan provided inside the rectangular opening in the bottom panel of the computer case.

FIG. 7 is a bottom view of still another alternate form of the present invention, showing two fans provided inside the rectangular opening in the bottom panel of the computer case.

FIG. 8 is a bottom view of still another alternate form of the present invention, showing one fan provided inside the circular opening in the bottom panel of the computer case.

FIG. 9 is a bottom view of still another alternate form of the present invention, showing two fans provided inside the circular opening in the bottom panel of the computer case.

FIG. 10 is an exploded view of still another alternate form of the present invention, showing air vents formed in the bottom panel of the computer case around the fans.

FIG. 11 is an exploded view of a still another alternate form of the present invention.

FIG. 12 is a front view in section of the embodiment shown in FIG. 11.

FIG. 13 is an elevational assembly view of the embodiment shown in FIG. 11.

DETAILED DESCRIPTION OF THE INVENTION

Referring to FIGS. 1~4, the computer case, referenced by **1**, has an opening **111** in the bottom panel **11**, and a fan **12** mounted inside the opening **111** and adapted to draw outside cooling air upwardly through the opening **111** into the inside of the computer case **1** to lower the internal temperature level of the computer case **1**. A deck **2** is provided to support the computer case **1** above the floor **3**, defining a ventilation gap **A** between the bottom panel **11** of the computer case **1** and the floor **3** for ventilation. The deck **2** comprises a flat base plate **21** and a plurality of upright supports **22** in four corners of the flat base plate **21**. The upright supports **22** each have a top cut **221** defining a horizontal seat **222** for the resting of the bottom panel **11** of the computer case **1**. A wire gauze filter **13** may be installed in the opening **111** to filtrate solid matter from currents of air passing through the opening **111**. According to this embodiment, the opening **111** is an oval opening. The wire gauze filter **13** has an oval shape fitting the oval opening **111**.

FIG. 5 shows an alternate form of the present invention. According to this alternate form, two fans **12** are provided inside the oval opening **111**.

FIG. 6 shows another alternate form of the present invention. According to this alternate form, the opening **112** of the computer case **1** is a rectangular opening in which one fan **12** is installed, and the wire gauze filter **14** has a rectangular shape fitting the rectangular opening **111**.

FIG. 7 shows still another alternate form of the present invention.

According to this alternate form, two fans **12** are provided inside the rectangular opening **111**.

FIG. 8 shows still another alternate form of the present invention. According to this alternate form, the opening **113** is a circular opening in which one fan **12** is installed.

FIG. 9 shows still another alternate form of the present invention. According to this alternate form, the computer case **1** has two circular openings **113** in the bottom panel **11**, and two fans **12** respectively mounted in the circular openings **113**.

FIG. 10 shows still another alternate form of the present invention. According to this alternate form, the bottom panel **11** of the computer case **1** is perforated, having a plurality of air vents **114** around the fans **12**.

FIGS. 11~13 show still another alternate form of the present invention. According to this embodiment, the deck, referenced by **4**, comprises a flat bottom plate **41** and a plurality of upright supports **42** in the four corners of the flat bottom plate **41**. The upright supports **42** are round rods having a respective flat topmost edge adapted to support the flat bottom panel of the computer case **1**.

Further, instead of the aforesaid deck **2** or **4**, an independent support may be used to support the computer case **1** above the floor **3**, defining a ventilation gap **A** between the bottom panel **11** of the computer case **1** and the floor **3** for ventilation.

Although particular embodiments of the invention have been described

in detail for purposes of illustration, various modifications and enhancements may be made without departing from the spirit and scope of the invention. Accordingly, the invention is not to be limited except as by the appended claims.